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Fig. 91 — Kamarakoto Old Woman and Girl.

No. 31 (old woman) had eight children, of whom two survive. She is one of the few women recorded who are past child-bearing or who have grandchildren. She is the mother of Antonio Montesdeoca. The girl, No. 32, is the daughter of Antonio, granddaughter of No. 31.

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Fully Adult Male Kamarakotos: N = 15

	R	M	σ	V
Head length	175 - 194	186.9±1.4	5.5±1.0	3.0±.5
Head breadth	150 - 160	154.2± .9	3.6± .7	2.3±.4
Head index	77 - 86	82.2± .6	2.3± .4	-------
Stature	147 1/2 - 168 1/2	160.0±1.3	5.0± .9	3.1±.6
Sitting height	79 - 90	84.8± .8	3.1± .6	3.6±.7
Stature less sitting height	68 1/2 - 81 1/2	75.2± .8	3.3± .6	4.3±.8
Span	153 - 180	169.0±1.7	6.5±1.2	3.9±.7
Weight	105 - 140	123.7±2.8	10.7±2.0	-------

Young Adult Male Kamarakotos; N = 9

	R	M	σ	V
Head length	173 - 190	182.7±1.4	4.2±1.0	2.3±
Head breadth	143 - 158	152.4±1.5	4.6±1.1	3.0±
Head index	78 - 86	83.2± .8	2.5± .6	-----
Stature	150 - 162	155.0±1.0	3.1± .7	2.0±.5
Sitting height	77 - 86 1/2	80.9± .9	2.6± .6	3.3±.8
Stature less sitting height	71 - 76 1/2	74.1± .6	1.7± .4	2.3±.5
Span	155 - 170	162.4±1.5	4.5±1.1	2.8±.7
Weight	105 - 125	112.2±2.1	6.3±1.5	-------

For this group the head index (which is not significantly correlated with age in any of my samples) is not significantly different from that of the fully adult group. The head breadth and the derived figure of stature less sitting height are not technically significantly different from the adult group as isolated figures, but this may certainly be taken as a chance result and the difference shown may, on broader grounds, be taken to characterize the populations. The other means are all decidedly significantly different from those for the fully adult group, the weight most so, and prove that this sexually mature and apparently adult group is not, in fact, full-grown, or in other words that some adult growth occurs.

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141 importance can be given a character so largely dependent on environment, even over a short period of time, when the environment of this Indian certainly is different (in whatever way) from that of the central group. In other respects these Indians are well within the Kamarakoto range, as they are also in the less measurable characteristics of appearance, and there is no reason to separate them physically from that tribe or at least from the group of Arekunas of this general region.

Kamarakotos and Taurepánes compare as follows:-

Comparison of Adult Male Kamarakotos and Taurepanes

	a. Mean of 15 Kamarakotos	b. Mean of 12 Taurepanes	a-b
Head length	186.9	184.3	2.6
Head breadth	154.2	154.2	0
Head index	82.2	83.2	-1.0
Stature	160.0	156.9	3.1
Sitting height	84.8	82.4	2.4
Stature less sitting height	75.2	74.5	.7
Span	169.0	164.4	4.6

None of these differences is significant (d/σ is less than 2.5 in all cases) and as far as these measurements go no distinction between male Kamarakotos and Taurepánes is shown. The fact that the Taurepánes appear to be slightly [145] smaller in all dimensions is due to the observed fact that the average age of the individuals in the Taurepán sample was slightly less, and some adult growth occurs in these groups.

Comparison of Adult Female Kamarakotos and Taurepanes

	a. Mean of 14 Kamarakotos	b. Mean of 11 Taurepanes	a-b
Head length	177.1	176.5	.6
Head breadth	150.9	150.6	.3
Head index	84.7	85.4	- .7
Stature	146.9	145.8	1.1
Sitting height	77.1	77.3	- .2
Stature less sitting height	69.8	68.5	1.3
Span	152.0	153.1	-1.1

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Comparisons of Means for 14 Kamarakoto Adult Females and 10 to 13[240] Makuchi Adult Females, the latter after Farabee

	a. Kamarakotos	b. Makuchis	a-b	P
Head length	177.1	172	5.1	<.02>.01
Head breadth	150.9	144	6.9	<.01
Head index	84.7	84.0	.7	---
Stature	146.9	142.8	4.1	.02
Sitting height	77.1	74.9	2.2	.07
Stature less sitting height	69.8	67.9	1.9	---
Span	152.0	151.9	.1	---

P M [[28]

In making the comparisons the standard errors of the differences between the means have been calculated by the formula assuming (as is the case) that the populations are distinct and comparing only means. Where no value for P is given, the deviation is obviously not significant.

In every case the Kamarakoto averages are larger than the Makuchi, although the differences are not all statistically significant. Among the men, the Kamarakotos almost surely are significantly taller, have wider heads, and greater sitting height. The leg length is not significantly greater, so that the greater height is in the torso and the legs are proportionately shorter. The span is greater. The Kamarakoto women likewise are taller, probably significantly, and have larger heads than the Makuchis. The span is not absolutely greater and is proportionately less, but not surely significantly. The torso-leg proportions, unlike those of the males, are about the same in Kamarakoto and Makuchi females.

P M [[10]

That the Kamarakotos and Makuchis are physically distinct, despite their resemblance in appearance, culture, and language, is evident even on the basis of these few measurements. This tends to support my classification of Makuchis in a general Roroimá group but as distinct from the Arekunas, with both Kamarakotos and Taurepánes placed as tribes of Arekunas.[241]

Growth

P 128 145 [114]

Absolute growth plotted against time cannot yet be studied for these or any allied Indians because none of them are of known age and no interested and competent observer has ever lived among them long enough to follow the growth of individuals over a known span of years. Estimates of absolute age are manifestly too unreliable to serve as a basis for detailed study. Relative age can, however, be judged within limits narrow enough to be of some use. Thus the

240, 241 [see footnotes on p.335, category 116 – Analyst]

Thus the
128 15 male children of pure central Kamarakoto stock that I measured can, with
145 a single exception, be placed with almost complete certainty into three groups
141 such that the relative ages of the groups are known and it is known that there is no overlap between them, even though the relative ages of individuals within a single group may still be uncertain. Omitting the one doubtful case, (who might belong either in group C or group D), the mean measurements of these groups, in comparison with young adults and full adults, are as follows:

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Growth in Male Kamarakoto

	a. Mean of 4 children about 2-3 years old	b. Mean of 5 children about 7-9 years old	c. Mean of 5 children about 10-13 years old	d. Mean of 9 young adults	e. Mean of 15 full adults
Head length	171.5	175.8	180.4	182.7	185.9
Head breadth	141.5	146.6	146.2	152.4	154.2
Head index	82.5	83.6	81.0	83.2	82.2
Stature	95.4	126.8	144.7	158.0	169.0
Sitting height	54.0	67.8	75.2	80.9	84.8
Stature less sitting height	41.4	58.9	69.4	74.1	78.2
Span	96.0	125.4	150.2	162.4	169.0
Weight	26.3	36.0	51.0	112.2	122.7

[126]
[123] Only eight female children were available for measurement, the females in general being less employed by us as workers and somewhat shyer about visiting our camp, where measurement was practicable. Three of these were of so nearly the same age that relative ages could not be certainly judged, but the others fell into a clear sequence, as follows:

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Growth in Female Kamarakotos

	No. 52, about 3 years old	No. 64, about 5 years old	Mean of Nos. 29, 32 & 51, about 6-7 years old	No. 50, about 8 years old	No. 27, about 10-11 years old	No. 61, about 15 years old	Mean of 14 adults
Head length	158	170	166	181	177	173	177.1
Head breadth	136	143	140	148	150	157	150.9
Head index	86	80	82	82	85	91	84.7
Stature	92	107	113	134	143	146 1/2	146.9
Sitting height	51 1/2	59	60 1/2	73	73	76	77.1
Stature less sitting height	40 1/2	48	52 1/2	61	70	69 1/2	69.8
Span	92	108	114	138	148	157	152.0
Weight	30	35	40	65	85	85	103.6

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The available data for male children and young adults, of whom 24 of central Kamarakoto stock were measured, in addition to the 15 older adults, provide (apparently for the first time) an opportunity to study relative growth in such a relatively pure and primitive human stock. This rather lengthy study is not within the proper scope of the present work, but in order to make the important data all available here in most convenient form, a tabulation of the linear measurements of these individuals (omitting the oldest group in which no determinable growth occurs) is presented below. Logarithms are given instead of raw measurements because the latter should be turned into logarithms for clearest study of relative growth in any case and one step is thus saved the reader without using any more space here. The sequence is that of stature.

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Logarithms of Linear Measurements of Male Kamarakotos

Record No.	Stature	Sitting height	Stature less sitting height	Span	Head length	Head breadth	Guessed age
35.	1.9320	1.6946	1.5563	1.9395	2.2175	2.1335	2
68.	1.9335	1.7160	1.5563	1.9395	2.2380	2.1461	2 1/2
30.	2.0149	1.7634	1.6580	2.0128	2.2430	2.1761	4
67.	2.0191	1.7520	1.6812	2.0294	2.2380	2.1461	4
63.	2.0828	1.8195	1.7404	2.0899	2.2455	2.1584	7-8
33.	2.0969	1.8261	1.7634	2.1004	2.2430	2.1732	7-8
37.	2.1038	1.8228	1.7818	2.1206	2.2355	2.1523	8-9
54.	2.1106	1.8261	1.7924	2.1271	2.2455	2.1675	8-9
36.	2.1206	1.8603	1.7745	2.1038	2.2553	2.1790	9-10
48.	2.1492	1.8808	1.8129	2.1492	2.2553	2.1761	12-13
46.	2.1538	1.8603	1.8451	2.1761	2.2480	2.1335	12-13
47.	2.1568	1.8692	1.8420	2.1732	2.2577	2.1553	12-13
16.	2.1703	1.8779	1.8603	2.1931	2.2480	2.1644	10
40.	2.1718	1.8949	1.8451	2.1903	2.2718	2.1931	12-13

1941
1945

Logarithms of Linear Measurements of Male Kamarakotos (Cont.)

Record No.	Stature	Sitting height	Stature less sitting height	Span	Head length	Head breadth	Guessed age
15.	2.1761	1.8865	1.8633	2.1903	2.2601	2.1847)	Young
62.	2.1790	1.9031	1.8513	2.2014	2.2577	2.1790)	adult, ca.
22.	2.1875	1.9031	1.8692	2.2014	2.2648	2,1553)	16-21 (ex-
23.	2.1875	1.8976	1.8751	2.2095	2.2380	2.1703)	cept No.
18.	2.1889	1.9165	1.8573	2.2304	2.2648	2.1875)	53 who is large but
58.	2.1917	1.9031	1.8779	2.2122	2.2625	2.1790)	younger
24.	2.1945	1.9031	1.8837	2.2135	2.2672	2.1987)	than others
10.	2.1973	1.9217	1.8692	2.2068	2.2788	2.1959)	in this
53.	2.1973	1.9004	1.8921	2.2175	2.2648	2.1818)	group, ca.
41.	2.2095	1.9370	1.8779	2.2279	2.2601	2.1959)	14).